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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/777,203

02/05/2001

Timothy M. Schmidl

TI-31284

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07/13/2006

TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding..

**Office Action Summary**

Application No.

09/777,203

Applicant(s)

SCHMIDL ET AL.

Examiner

Qutub Ghulamali

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-22 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 23-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is responsive to applicant's Remarks/Amendments filed on 06/02/2006.

#### **Response to Submission After Final**

2. Applicant's remarks filed June 02, 2006 (see pages 9-13) in response to the rejection of claims 8-11, 13-15 and 16-22, has been fully considered and as a result the Finality of Office Action dated December 29, 2005, is hereby withdrawn in view of new ground of rejection. Applicant's first submission after final filed on 06/02/2006 has been entered.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7, 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rogard (US Patent 4,718,066) in view of Rhee (US Patent 6,289,054).

Regarding claims 1, 23 and 27, Rogard discloses a data communications system and a method for transmission of signals from a transmitter to a receiver, the transmitter comprising:

the transmitter end applying to a plurality of original data bits that are to be transmitted to the receiving end an encoding algorithm that produces overhead bits (encoding means for encoding a message in sets of data blocks (plurality of data bits), each block including additional check symbols enabling detection and correction within the block including redundant data blocks (produce overhead bits) (col. 3, lines 20-35). Rogard however, does not explicitly show,

transmitting end transmitting the original data bits without the overhead bits in a first transmission to the receiving end; and transmitting end refraining from transmitting the overhead bits until the transmitting end receives an indication of error in reception from the receiving end. Rhee, in a similar field of endeavor discloses a method of communicating data from a transmitting end (sender) to a receiving end (receiver) apparatus in a mobile communication system wherein, transmitting end transmitting the original data bits (periodic frame) without the overhead bits (no CRC attached) in a first transmission to the receiving end (col. 2, lines 14-24, 35-48; col. 3, lines 53-67); and transmitting end (sender) refraining from transmitting the overhead bits until the transmitting end receives an indication from the receiving end that the original data have not been correctly received at the receiving end (col. 5, lines 25-50; col. 15, lines 50-62). It would have been obvious to a person of ordinary skill in the art the time the invention was made to have the transmitter transmit original data and transmitting end

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refraining from transmitting the overhead (CRC) bits as taught by Rhee in the system of Rogard because it can minimize retransmission of signals and conserve transmission power and time.

Regarding claims 2 and 24, Rogard discloses transmitting end transmitting overhead bits (redundant data) to the receiving end in a second transmission (next set of data) (col. 3, lines 20-35; col. 9, lines 55-67).

Regarding claims 3, 29, 31 and 32, Rogard discloses all limitations of the claim. Rogard, however, is not explicit regarding receiving end combining a received version of the original data bits and a received version of the overhead bits to produce a combined set of received bits and the receiving end applying to the combined set of received bits a decoding algorithm that corresponds to said encoding. Rhee in a similar field of endeavor discloses receiving end combining a received version of the original data bits (compressed) and a received version of the overhead bits, and applying to the combined set (compressed) of received bits a decoding algorithm (decompression) that corresponds to said encoding process (col. 2, lines 36-48; col. 3, lines 42-46; col. 5, lines 19-36). It would have been obvious to one of ordinary skill in the art the time the invention was made to combine received original data bits and overhead bits to produce a combined set of received bits and apply it to a decoding process as taught by Rhee in the system of Rogard because by combining and decoding together the received bits, quality of the transmission can be checked and reproduction of the original data bits can be adequately achieved.

Regarding claim 4, Rogard and Palm combined discloses all limitations of the claim. Rogard, however, does not explicitly show a mapping or storing to determine operation has not resulted in the original data bits and in response to determination the receiving end combining the received version of the original received transmission with the overhead bits and applying a decoding process that corresponds to encoding process. Rhee in a similar field of endeavor discloses storing to determine operation has not resulted in the original data bits and receiving end applying an error detection procedure to the result of storing, and in response to determination the receiving end combining the received version of the original received transmission with the overhead bits and applying a decoding process that corresponds to encoding process (abstract; col. 5, lines 11-36; col. 6, lines 7-22, 55-67). It would have been obvious to one of ordinary skill in the art the time the invention was made to storing or mapping to determine operation has not resulted in the original data bits and receiving end applying an error detection procedure to the result of storing, and in response to determination the receiving end combining the received version of the original received transmission with the overhead bits and applying a decoding process that corresponds to encoding process as taught by Rhee in the system of Rogard because by combining and decoding together the received bits, quality of the transmission can be checked and reproduction of the original data bits can be adequately achieved.

Regarding claims 5 and 25, Rogard and Rhee disclose all limitations of the claim. The combination however, is not explicit regarding Viterbi encoding and decoding algorithms. As best understood by the examiner, the Viterbi encoding and decoding is

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conventionally well known and expected in the art of signal communication. Therefore, it would have been obvious to a person of ordinary skill in this art to include Viterbi encoding and decoding algorithms with the combined arts disclosed to provide efficient and reliable data reception and transmission.

As per claims 6, 26 and 30, Rogard discloses all limitation of the claim. Rogard however, is not explicit about the receiving end applying an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data. Rhee in a similar field of endeavor discloses receiving end applying an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data (col. 5, lines 37-50; col. 6, lines 60-67; col. 7, lines 1-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the receiving end apply an error detection procedure to a result of decoding to determine whether decoding has resulted in original data bits and transmit to the transmitting end a request for retransmission of the original data as taught by Rhee in the system of Rogard because process of early detection of errors can mitigate transmission and retransmission of message queuing and maximize channel usage.

As per claim 7, Rogard discloses all limitation of the claim. Rogard however, does not explicitly show transmitter end retransmitting the original data bits to the receiving end and, in response to a determination by the receiving end that said retransmission of the original data bits has not been received correctly, the receiving

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end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received bits, and the receiving end applying said decoding algorithm to said another combined set of received bits. Rhee in a similar field of endeavor discloses transmitter end retransmitting the original data bits to the receiving end and, in response to a determination by the receiving end that said retransmission of the original data bits has not been received correctly, the receiving end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received bits, and the receiving end applying said decoding algorithm to said another combined set of received bits (col. 3, lines 54-67; col. 5, lines 11-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the receiving end combining a received version of the retransmitted original data bits with said received version of the overhead bits to produce another combined set of received bits, and the receiving end applying said decoding algorithm to said another combined set of received bits as taught by Rhee in the system of Rogard because early detection of errors in the process can mitigate transmission and retransmission of message queuing and maximize channel usage.

As per claim 28, Rogard and Rhee combination discloses every feature of the claimed invention except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person of ordinary skill in the art to include convolution encoding algorithm



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in the combined system of Rogard and Rhee because it can lead to reliable encoding of signals.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Rhee (USP 6,289,054).

Regarding claim 8, Rhee discloses a method and system of communicating data from a transmitter to a receiver comprising:

the receiving end receiving from the transmitter a first transmission including original data bits without the overhead bits produced at the transmitting end (sender) by operation of an encoding algorithm applied to the original (periodic) data bits (col. 5, lines 11-24);

receiving end determining whether the original data bits have been correctly received and responsive to a determination that the original data bits have not been received correctly, the receiving end transmitting to the transmitting end a request for transmission of the overhead bits (col. 5, lines 37-50; col. 6, lines 55-67).

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As per claim 9, Rhee discloses every feature of the claimed invention except a convolutional encoding algorithm. Official Notice is taken that both the concept and the advantages of using convolutional encoding algorithm are conventionally well known and expected in the art. Therefore it would have been obvious to a person of ordinary skill in this art to include convolution encoding algorithm in the combined system of Rhee because it can lead to reliable encoding of signals.

***Allowable Subject Matter***

7. Claims 10-15, 16-22 allowed.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

US Patent 6,850,559 to Driessen et al.

US Patent 6,671,849 to Tripathi et al.

US Patent 6,594,791 to Sipola.

US Patent 6,346,874 to Maeshima.

US Patent 6,314,541 to seyttter.

US Patent 6,728,920 to Ebersman.

US Patent 6,418,549 to Ramchandran et al.

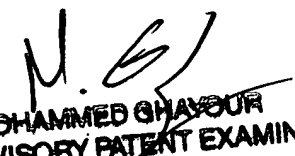
US Pub. 2001/0056560 to Khan et al.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
June 27, 2006.

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER